

CONTACTS	Box 1910 Brown University 115 Waterman Street Providence, RI 02912, USA	Voice: +1-401-654-3216 E-mail: <a href="mailto:matteo@cs.brown.edu">matteo@cs.brown.edu</a> WWW: <a href="http://cs.brown.edu/~matteo">http://cs.brown.edu/~matteo</a>
RESEARCH INTERESTS	Data analytics, pattern mining, graph mining, randomized algorithms, social network analysis, algorithms for distributed/parallel architectures for big data, privacy issues in data analysis, statistical learning theory.	
EDUCATION	<b>Brown University</b> , Providence, Rhode Island, USA Ph.D., Computer Science, May 2014 <ul style="list-style-type: none"><li>• Doctoral Dissertation: <i>Sampling-based randomized algorithms for big data analytics</i></li><li>• Advisor: Prof. Eli Upfal</li><li>• Best student poster award at SIAM Int. Conf. on Data Mining (SDM'14), April 2014.</li></ul> M.Sc., Computer Science, May 2010 <b>Università di Padova</b> , Padua, Italy Laurea Magistrale (M.Sc.) 110/110 <i>cum laude</i> , Computer Engineering, July 2009 <ul style="list-style-type: none"><li>• Master Thesis: <i>Top-k frequent itemsets mining through sampling</i></li><li>• Advisors: Prof. Andrea Pietracaprina, Prof. Eli Upfal, Fabio Vandin</li></ul> Laurea (B.Sc.), Information Engineering, July 2007 <ul style="list-style-type: none"><li>• Final Project: <i>Algorithmical foundations of cryptography</i></li><li>• Advisor: Prof. Andrea Pietracaprina</li></ul>	
PUBLICATIONS	<p>[10] M. Riondato and F. Vandin. Finding the true frequent itemsets. <i>14th SIAM Int. Conf. on Data Mining, SDM'14, Philadelphia, PA, USA, April 24–26, 2014</i>.</p> <p>[9] M. Riondato and E. Upfal. Efficient discovery of association rules and frequent itemsets through sampling with tight performance guarantees. <i>ACM Trans. on Knowl. Disc. from Data (in press)</i>.</p> <p>[8] M. Riondato and E. M. Kornaropoulos. Fast approximation of betweenness centrality through sampling. <i>7th ACM Int. Conf. on Web Search and Data Mining, WSDM'14, New York, NY, USA, February 24–28, 2014</i>.</p> <p>[7] M. Riondato, J. A. DeBrabant, R. Fonseca, and E. Upfal. PARMA: A parallel randomized algorithm for association rules mining in MapReduce. <i>21st ACM Int. Conf. on Inform. and Knowl. Manag., CIKM'12, Maui, HI, USA, October 29 – November 02, 2012</i>.</p> <p>[6] M. Riondato and E. Upfal. Efficient discovery of association rules and frequent itemsets through sampling with tight performance guarantees. <i>European Conf. on Mach. Learn. and Knowl. Disc. in Databases, ECML PKDD'12, Bristol, UK, September 24–28, 2012</i>.</p> <p>[5] A. Pietracaprina, G. Pucci, M. Riondato, F. Silvestri, and E. Upfal. Space-round tradeoffs for MapReduce computations. <i>ACM Int. Conf. on Supercomputing, ICS'12, Venice, Italy, June 25–29, 2012</i>.</p> <p>[4] M. Akdere, U. Çetintemel, M. Riondato, E. Upfal, and S. B. Zdonik. Learning-based query performance modeling and prediction. <i>28th IEEE Int. Conf. on Data Engin., ICDE'12, April 1–5, 2012, Washington, DC, USA</i>.</p> <p>[3] M. Riondato, M. Akdere, U. Çetintemel, S. B. Zdonik, and E. Upfal. The VC-dimension of SQL queries and selectivity estimation through sampling. <i>European Conf. on Mach. Learn. and Knowl. Disc. in Databases, ECML PKDD'11, Athens, Greece, September 5–9, 2011</i>.</p> <p>[2] M. Akdere, U. Çetintemel, M. Riondato, E. Upfal, and S. B. Zdonik. The case for predictive database systems: Opportunities and challenges. <i>5th Biennial Conf. on Innovative Data Sys. Research, CIDR'11, Asilomar, CA, USA, January 9–12, 2011</i>.</p> <p>[1] A. Pietracaprina, M. Riondato, E. Upfal, and F. Vandin. Mining top-k frequent itemsets through progressive sampling. <i>Data Mining and Knowl. Disc.</i>, 21(2):310–326 (special issue for ECML PKDD'10), 2010.</p>	

- [11] A. Anagnostopoulos, L. Becchetti, A. Fazzone, I. Mele, and M. Riondato. The importance of being experts: Efficient max-finding in crowdsourcing.
- [12] M. Riondato, D. García-Soriano, and F. Bonchi. Graph summarization with guarantees.
- [13] M. Riondato, M. Akdere, U. Çetintemel, S. B. Zdonik, and E. Upfal. The VC-dimension of SQL queries and selectivity estimation through sampling (extended version).

AWARDS	SIAM Best Student Poster Award at SIAM SDM'14	<b>April 2014</b>
	SIAM Student Travel Grant to SIAM SDM'14	<b>April 2014</b>
	Brown University Dissertation Fellowship	<b>Fall 2013</b>
	Yahoo! Research Summer Internship	<b>Summer 2013</b>
	Research Fellowship from MIUR of Italy under Project AlgoDeep prot. 2008TFBWL4	<b>Summer 2011</b>
	Brown University Graduate Fellowship	<b>Academic Year 2009–10</b>
INVITED TALKS	Efficient Frequent Itemsets mining through sampling <i>Computer Science and Artificial Intelligence Laboratory, MIT</i> , 04/10/2014.	
	Taming the challenges of Big Data with statistical data analytics. <i>Department of Computer Science, Boston College</i> , 02/07/2014.	
	Fast betweenness estimation through sampling. <i>Data Management Group Seminar, Boston University</i> , 10/17/2013.	
	Fast betweenness estimation through sampling. <i>Lab Research Seminar, Yahoo! Labs Barcelona</i> , 6/13/2013.	
	Fast betweenness estimation through sampling. <i>Advanced Computing Group Talk, Department of Information Engineering, University of Padua, Italy</i> , 5/30/2013.	
	Statistical learning theory meets knowledge discovery: Randomized algorithms for Big Data analytics. <i>Brown CS Industrial Partners Program Symposium</i> , 4/25/2013.	
	Approximate aggregate database queries through sampling. <i>Invited Lecture for CSCI-2950-T, Brown University</i> , 10/25/2011.	
	Graphs algorithms in MapReduce: Design choices and optimizations. <i>Invited Lecture for CSCI-2950-U, Brown University</i> , 9/27/2011.	
	Statistical learning theory meets databases. <i>Advanced Computing Group Talk, Department of Information Engineering, University of Padua, Italy</i> , 06/24/2011.	
ADDITIONAL RESEARCH EXPERIENCE	Top-k frequent itemsets mining through sampling. <i>Advanced Computing Group Talk, Department of Information Engineering, University of Padua, Italy</i> , 9/16/2010.	
	<b>Yahoo! Labs</b> , Barcelona, Spain	
	<i>Summer Intern Research Scientist in the Web Mining Group</i>	<b>June – August 2013</b>
	<ul style="list-style-type: none"> <li>Worked with Dr. Francesco Bonchi and others on algorithms for graph summarization and for frequent itemsets mining from data streams in a distributed setting.</li> </ul>	
	<b>Summer School on Massive Data Mining</b> , Copenhagen, Denmark	
	<i>Student</i>	<b>August 8 – 10, 2012</b>
	<ul style="list-style-type: none"> <li>Attended the Summer School on Massive Data Mining organized by Prof. R. Pagh at IT University of Copenhagen.</li> </ul>	
	<b>Sapienza Università di Roma</b> , Rome, Italy	
	<i>Visiting Ph.D. Student</i>	<b>June – July 2012</b>
	<ul style="list-style-type: none"> <li>Worked with Prof. S. Leonardi, A. Anagnostopoulos, and L. Becchetti on algorithms for a model of crowdsourcing computation, and on algorithms for MapReduce.</li> </ul>	
	<b>Università di Padova</b> , Padua, Italy	
	<i>Research Fellow</i>	<b>May – July 2011</b>
	<ul style="list-style-type: none"> <li>Worked with Prof. A. Pietracaprina, G. Pucci, and F. Silvestri on “The MapReduce Paradigm: computational model and algorithms”. Funded by MIUR of Italy under Project AlgoDEEP prot. 2008TFBWL4.</li> </ul>	

**Chalmers University of Technology**, Gothenburg, Sweden

*Visiting Ph.D. Student*

**August 2010**

- Worked with Prof. Devdatt Dubhashi and helped organize a seminar on Probability and Computing.

**Brown University**, Providence, RI, USA

*Visiting Grad Student*

**October 2008 – June 2009**

- Worked with Prof. Eli Upfal on master thesis *Top-K Frequent Itemsets Mining through Sampling*.

TEACHING AND  
ADVISING  
TRAINING AND  
EXPERIENCE

**The Harriet W. Sheridan Center for Teaching and Learning (Brown University)**, Providence, RI, USA

- Teaching Certificate I: Reflective Learning, AY 2013–14

**Brown University**, Providence, Rhode Island, USA

- Mentor, New Scientist Program Graduate-Undergraduate Mentoring Initiative, Spring 2014
- Teaching Assistant, Probability and Computing, Spring 2012, Spring 2013, Spring 2014
- Teaching Assistant, Probabilistic Methods in Computer Science, Fall 2010

SERVICE

**External/Sub- reviewer for the following conferences**

- RANDOM'11, ICS'12, IPDPS'12, WSDM'13, MFCS'13, BigData'13, WSDM'14.

**Brown University Graduate Student Council**

*President*

**April 2011 – December 2012**

- Represented the interests of the entire graduate student community (approx. 2000 students) with the university administration and the broader community at all levels. Previously held positions include Vice-President of Administration (Jan. – April 2011) and representative for the Computer Science Department (Sept. 2009 – April 2011, Jan 2013 – *ongoing*).

**Brown University Graduate Council**

*Student Representative*

**September 2011 – May 2013**

- Represented the graduate student community in the highest body governing graduate education.

**Brown University Strategic Planning Committee on Doctoral Education**

*Student Representative*

**September 2012 – May 2013**

- Represented the graduate student community to develop the presidential strategic plan for the next decade.

**Brown Computer Science Theory Lunch**

*Organizer*

**January – December 2010**

- Responsible for organizing the weekly meeting of the Theory Group.

MEMBERSHIP

**Association for Computing Machinery (ACM)**

- Student member and member of Special Interest Group on Knowledge Discovery from Data (SIGKDD).

**Institute of Electrical and Electronic Engineers (IEEE)**

- Student member and member of IEEE Computer Society.

**Society for Industrial and Applied Mathematics (SIAM)**

- Student member and member of SIAM Activity Group on Data Mining and Analytics (SIAG/DMA).

SOFTWARE

**CentrSampl**

- Algorithm to estimate node betweenness centrality in large graphs. Based on [8].  
<http://cs.brown.edu/~matteo/centrsampl.tar.bz2>.

**PARMA**

- Frequent itemsets and association rules mining algorithm for Hadoop MapReduce. Based on [7].  
<http://cs.brown.edu/~matteo/parma.tar.bz2>.

**FreeSBIE**

*Developer, Release Engineer for the 2.x series*

**April 2004 – July 2009**

- Developed FreeSBIE, a Live-CD distribution of FreeBSD bootable from CD-ROM. Release Engineer for FreeSBIE 2.X. series, responsible for all aspects of the release. <http://www.FreeSBIE.org>.

## The FreeBSD Project

*src Committer*

**January 2006 – June 2013**

- Contributed to the development of the FreeBSD UNIX operating system. Granted write access to the main source repository. Worked on the `jail` security feature and on handling and solving bug reports of various nature. Author of the *Jail* chapter in the FreeBSD Handbook. <http://www.FreeBSD.org>.

### REFERENCES

Prof. Eli Upfal  
Dept. of Computer Science  
Brown University  
[eli@cs.brown.edu](mailto:eli@cs.brown.edu)

Prof. Uğur Çetintemel  
Dept. of Computer Science  
Brown University  
[ugur@cs.brown.edu](mailto:ugur@cs.brown.edu)

Dr. Francesco Bonchi  
Yahoo! Labs Barcelona  
Yahoo!  
[bonchi@yahoo-inc.com](mailto:bonchi@yahoo-inc.com)

### UP-TO-DATE VERSION

Available from [http://cs.brown.edu/~matteo/matteo\\_riondato\\_cv.pdf](http://cs.brown.edu/~matteo/matteo_riondato_cv.pdf)